

Letter to the Editor

Cite this article: Shah MH, Roy S, Flari E. The critical need for disaster medicine in modern medical education. *Disaster Med Public Health Prep.* 18(e80), 1–2. doi: <https://doi.org/10.1017/dmp.2024.56>.


Keywords:

disaster medicine; medical education; emergency preparedness; resource allocation

Corresponding author:

Muhammad Hamza Shah;
Email: mshah03@qub.ac.uk.

The Critical Need for Disaster Medicine in Modern Medical Education

Muhammad Hamza Shah^{1,2} , Subham Roy³  and Eleni Flari^{1,2} 

¹School of Medicine, Dentistry & Biomedical Sciences, Queen's University Belfast, Belfast, UK; ²Centre for Anatomy, Deanery of Biomedical Sciences, University of Edinburgh, Edinburgh, UK and ³Hull York Medical School, University of York, York, UK

Abstract

Current escalation of natural disasters, pandemics, and humanitarian crises underscores the pressing need for inclusion of disaster medicine in medical education frameworks. Conventional medical training often lacks adequate focus on the complexities and unique challenges inherent in such emergencies. This discourse advocates for the integration of disaster medicine into medical curricula, highlighting the imperative to prepare health-care professionals for an effective response in challenging environments. These competencies encompass understanding mass casualty management, ethical decision-making amidst resource constraints, and adapting health-care practices to varied emergency contexts. Therefore, we posit that equipping medical students with these specialized skills and knowledge is vital for health-care delivery in the face of global health emergencies.

In a world increasingly beset by natural disasters, pandemics, and complex humanitarian emergencies, the imperative to incorporate disaster medicine into medical education has never been more urgent. With climate change leading to more frequent and severe natural disasters, and global connectivity heightening the spread of infectious diseases, medical professionals are increasingly likely to encounter disaster scenarios in their careers. Moreover, the coronavirus disease 2019 (COVID-19) pandemic has underscored the importance of preparing health-care providers for large-scale medical crises.¹

Yet, traditional medical education often falls short in preparing students for these exigencies. This gap can be addressed through innovative teaching methods, notably simulation-based training. Simulation in medical education provides a safe, controlled environment where students can learn and practice disaster response skills without real-world consequences.² It offers hands-on experience in managing mass casualty incidents, triaging patients, and making critical decisions under pressure—skills that are difficult to acquire through lectures or textbook learning alone. Additionally, the ethical aspects of disaster medicine, such as resource allocation and prioritizing care under duress, can potentially also be taught through these simulation exercises, providing a more comprehensive and realistic learning experience.

In accordance with this, International Federation of Medical Students' Association's (IFMSA's) initiatives offer more insight into incorporating disaster medicine by means of short courses/trainings using different pedagogical exercises. The methodology used in these trainings includes lectures, workshops, role-plays, simulations, and presentations by external speakers, such as representatives from the International Committee of the Red Cross (ICRC).³ The objectives of the IFMSA training workshops align with broader efforts to incorporate disaster medicine into medical curricula. These workshops aim to provide basic knowledge of disaster medicine, foster a platform for discussion among students from diverse backgrounds, and create momentum for advocating better disaster preparedness within health systems. Importantly, these trainings also address hospital safety and health professional endangerment in frontline disaster response, a concern that has gained prominence considering recent events in conflict zones like Afghanistan.

Similarly, the Disaster Medicine Interest Group (DMIG) at the University of California, Riverside School of Medicine exemplifies the practical integration of disaster medicine into medical education. Established by medical students, the group focuses on equipping their peers with the necessary skills to deliver high-quality emergency care in a range of challenging conditions. Using the university's advanced Center for Simulated Patient Care, DMIG provides immersive, realistic training experiences. This includes hands-on practice in managing emergencies in various settings, from wilderness scenarios to active shooter situations.⁴ Concurrently, incorporating disaster electives has been received well from participating students and portrays higher student proficiency.⁵

Therefore, DMIG's simulation-based approach and IFMSA's global training initiatives exemplify effective strategies for integrating disaster response into medical curricula. To support these efforts, a comprehensive schematic has been developed, serving as a practical guide for

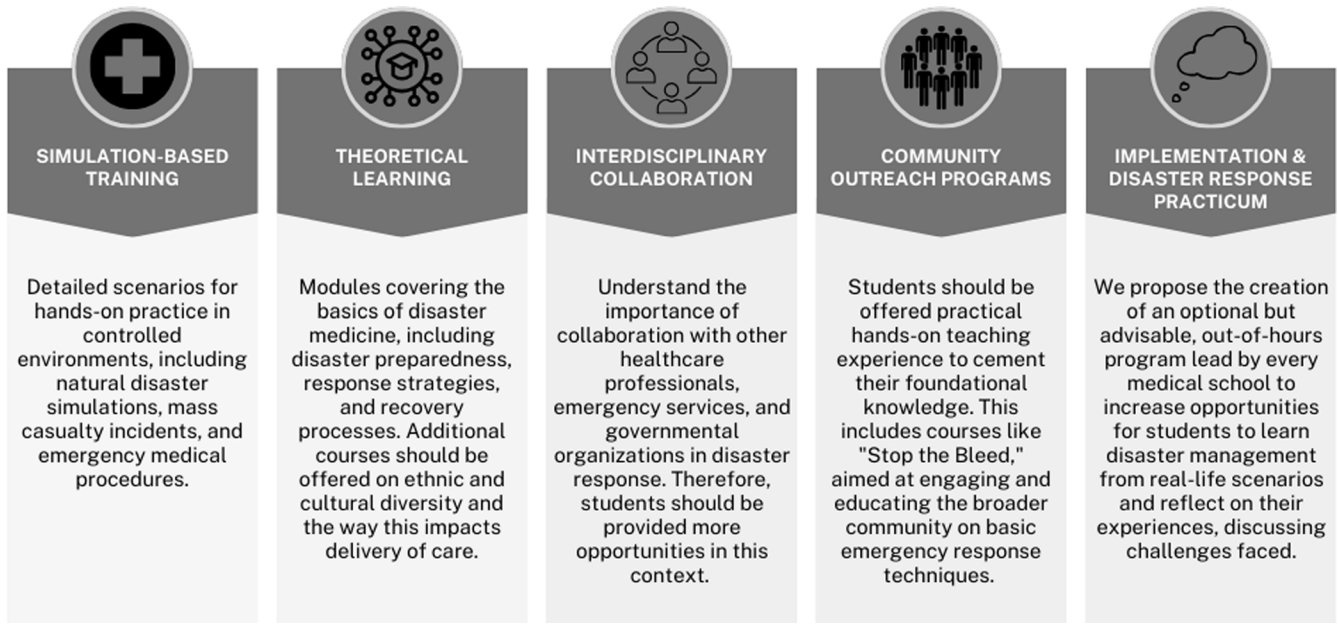


Figure 1. Comprehensive framework for disaster medicine integration in medical education.

medical schools (Figure 1). This resource outlines critical training components, ensuring that medical students are not only theoretically proficient but also practically prepared for disaster scenarios. However, it is important to note that integrating disaster medicine into the curriculum comes with a unique set of challenges. Medical programs are densely packed, and incorporating disaster medicine requires a careful balance to avoid overwhelming students or diminishing other vital subjects. Alongside this, resource allocation needed for simulation-based training poses its own set of difficulties. These simulations, crucial for hands-on experience, demand not just advanced equipment but also skilled personnel to facilitate the sessions and ample time for students to engage in these learning activities. Moreover, ensuring consistency and standardization across various educational institutions adds another layer of complexity. It is vital to establish a core set of competencies and learning objectives that are applicable across institutions, ensuring that all medical students, irrespective of their place of training, receive uniform instruction.

All in all, by integrating real-life scenario-based learning into the medical curriculum through an extracurricular framework, we are not only enhancing the practical skills and preparedness of future medical professionals but also ensuring their education remains responsive to the challenges of modern health-care landscapes. It is a step forward in aligning medical education with

the dynamic demands of health care in disaster and crisis situations.

Author contributions. Both M.H.S. and S.R. carried out the concept and design of the research question. S.R., M.H.S., and E.F. drafted the manuscript and edited and revised the manuscript, offered administrative, technical, or material support and approved the final version.

Competing interests. None.

References

1. **Marcassoli A, Leonardi M, Passavanti M, et al.** Lessons learned from the lessons learned in public health during the first years of COVID-19 pandemic. *Int J Environ Res Public Health*. 2023;20(3):1785. doi: [10.3390/ijerph20031785](https://doi.org/10.3390/ijerph20031785)
2. **Shrestha R, Kanchan T, Krishan K.** *Simulation Training and Skill Assessment in Disaster Medicine*. StatPearls Publishing; July 24, 2023.
3. **Ragazzoni L, Linty M, Della Corte F.** Worldwide experiences in disaster medicine education. *Disaster Med Public Health Prep*. 2020;14(3):e22-e23. doi: [10.1017/dmp.2020.150](https://doi.org/10.1017/dmp.2020.150)
4. **UC Riverside.** Disaster Medicine and Teaching Medical Students to Adapt. School of Medicine News. November 29, 2022. Accessed December 20, 2023. <https://somnews.ucr.edu/disaster-medicine-training>
5. **Kaji AH, Coates W, Fung CC.** A disaster medicine curriculum for medical students. *Teach Learn Med*. 2010;22(2):116-122. doi: [10.1080/10401331003656561](https://doi.org/10.1080/10401331003656561)